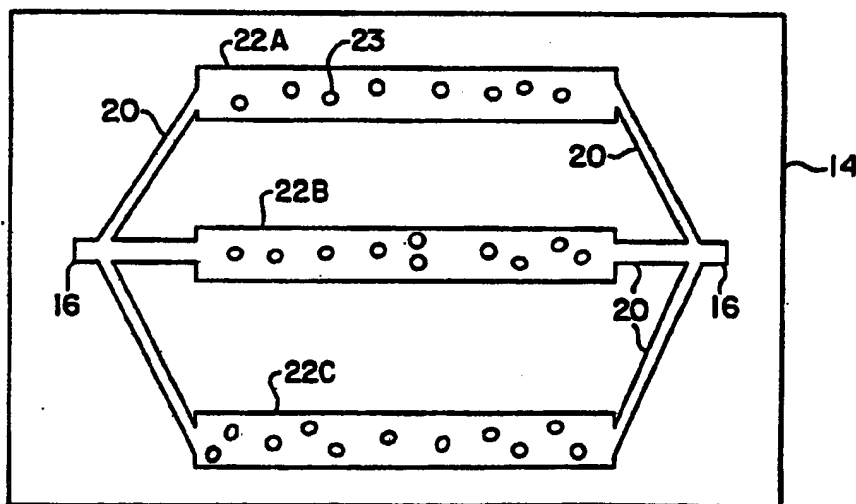




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : B01L 3/00, G01N 33/543		A1	(11) International Publication Number: WO 93/22053
			(43) International Publication Date: 11 November 1993 (11.11.93)
(21) International Application Number: PCT/US93/04013		(74) Agent: PITCHER, Edmund, R.; Testa, Hurwitz & Thibault, Exchange Place, 53 State Street, Boston, MA 02109 (US).	
(22) International Filing Date: 29 April 1993 (29.04.93)			
(30) Priority data:		(81) Designated States: AU, CA, JP, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
877,536	1 May 1992 (01.05.92)	US	
877,661	1 May 1992 (01.05.92)	US	
877,662	1 May 1992 (01.05.92)	US	
877,701	1 May 1992 (01.05.92)	US	
877,702	1 May 1992 (01.05.92)	US	
(71) Applicant: TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA [US/US]; 3700 Market Street, Suite 300, Philadelphia, PA 19104 (US).		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
(72) Inventors: WILDING, Peter ; 208 Darby Road, Paoli, PA 19301 (US). KRICKA, Larry, J. ; 886 Nathan Hale Road, Berwyn, PA 19312 (US). ZEMEL, Jay, N. ; 223 Meetinghouse Road, Jenkintown, PA 19046 (US).			

(54) Title: MICROFABRICATED DETECTION STRUCTURES



(57) Abstract

Disclosed are devices for detecting the presence of a preselected analyte in a fluid sample. The devices comprise a substrate microfabricated to define a sample inlet port (16), and a mesoscale flow system that includes a sample flow channel (20) extending from the inlet port. The mesoscale flow system further includes an analyte detection region (22) in fluid communication with the flow channel (20) comprised of a binding moiety for specifically binding the analyte. The detection region is constructed with a mesoscale dimension sufficiently small to enhance binding of the binding moiety and the analyte. The binding moiety may be immobilized in the detection region. The mesoscale detection systems of the invention may be used in a wide range of applications, including the detection of cells or macromolecules, or for monitoring reactions or cell culture growth.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FR	France	MR	Mauritania
AU	Australia	GA	Gabon	MW	Malawi
BB	Barbados	GB	United Kingdom	NL	Netherlands
BE	Belgium	GN	Guinea	NO	Norway
BF	Burkina Faso	GR	Greece	NZ	New Zealand
BG	Bulgaria	HU	Hungary	PL	Poland
BJ	Benin	IE	Ireland	PT	Portugal
BR	Brazil	IT	Italy	RO	Romania
CA	Canada	JP	Japan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SK	Slovak Republic
CI	Côte d'Ivoire	LJ	Liechtenstein	SN	Senegal
CM	Cameroon	LK	Sri Lanka	SU	Soviet Union
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	MC	Monaco	TC	Togo
DE	Germany	MG	Madagascar	UA	Ukraine
DK	Denmark	ML	Mali	US	United States of America
ES	Spain	MN	Mongolia	VN	Viet Nam
FI	Finland				